Masterclass
Energy Business Portfolio Strategy
25 May 2021
Agenda

- Introduction
- Energy Transition in EU27, Eastern Europe & Balkans - Csinszka
- Energy Business Portfolio Diversification - Leon
- Case studies - Leon
- Q & A
- Closing
Energy Investment Management BV

Investment Management & Advisory Boutique

with focus on

Energy Transition Assets and Cleantech Ventures

Advisory

Advisory services related to investments in energy industry assets and cleantech ventures: development, transactions and implementation

Thought Leadership

We show and create leadership in investment management in energy transition assets and cleantech ventures with organizing and participating in: research projects, programs, networks and events

Investments

We invest ourselves with our private investor network in energy transition assets and cleantech ventures. We structure investment portfolios, develop fund structures and participation concepts
European Energy Transition Network - East meets West
Program

East-European Energy Transition Entrepreneurial Opportunities Program

Research Erasmus University
Enlit Europe
Master-classes
Research VU Amsterdam
EU SEW
East European Knowledge Team
Cooperation Energy Community
Multi Media Eastern Europe
Key-elements East-European Energy Transition Entrepreneurial Opportunities Program

- Business Portfolio Strategy
- Business Development Accelerators
- In-depth understanding regional circumstances

Denisa Kasa
Program manager
Masterclass Series Energy Investment Management

Energy Transition
Regulatory Framework development

Energy Business Portfolio Strategy

Energy Asset Development
Energy Asset Project Finance
Energy Asset Transactions

Cleantech Start-up Development
Investment Management Cleantech Start-ups
Growth Capital Cleantech Companies
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European ambitions
The European Commission launched a public debate about the EU’s upcoming Climate Law on Tuesday (28 January), with a view to enshrining the bloc’s 2050 “climate neutrality” target into binding legislation before the UN climate conference in Glasgow later this year.
European Green Deal Investment Plan

WHERE WILL THE MONEY COME FROM?

- At least €1 trillion

EU Budget

- €503 billion for Climate and Environment

InvestEU

- European Investment Bank Group
- National Promotional Banks and International Financial Institutions

Private & Public

InvestEU towards climate and environment targets = Mobilised investment of €279 billion

Just Transition Mechanism

- €100 billion
- (€145 billion over 10 years)

EU Emissions Trading System (ETS) Funds €25 billion

National co-financing structural funds €114 billion

EU budget triggered by EU budget *without prejudice to the future multi-annual financial framework (MFF)

*The numbers shown here are net of any overlaps between climate, environmental and Just Transition Mechanism objectives.
Clean energy investment in the net zero pathway, 2016-2050
Net Zero by 2050: A Roadmap for the Global Energy System

trillion USD (2019)

- Low-emissions fuels
- Electricity generation
- Energy infrastructure
- End-use

International Energy Agency
Key technologies for net zero

- RES (solar, wind, hydro, geothermal)
- low-carbon gases and fuels
- energy efficiency
- new infrastructure: transmission, distribution, smart grids
- storage and digitalization
- end use: EVs, retrofitting, heat pumps, demand-side mgmt
- hydrogen as fuel and feedstock
- Carbon capture, storage and utilization (CCUS)

Key aspects

- understanding the local situation
- cross-border cooperation
- developing the right regulatory and policy context
- economic situation is much more challenging in Eastern and Southern Europe: every EUR invested in these regions has bigger value than in Western EU
- Brussels has to be supportive
- Just Transition
Ukraine’s energy system to be integrated with the European system by 2023

Timmermans: EU countries need to face the consequences of higher climate goals

EU Parliaments votes to place a carbon price on imports from less climate-ambitious countries

Consultation launched on Gas Interconnection Points at EU external borders and within the Energy Community

Kadri Simson: the hydrogen potential of the CEE region

Renewables could cover more than one-third of energy demand in Central and South Eastern Europe
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Energy transition in Germany

Germany is often praised as being the frontrunner in the transition to renewable energy

“feed-in tariff” key driver of this trend because of the stable investment situation

- tariff has been reset every year to reflect the falling costs of wind and solar technologies
- From 2016 onwards, large solar and wind installations with more than 750 KW capacity no longer qualify for a feed-in tariff but instead must bid in a government-managed auction

Challenges:
- to align the old system with the new one based on renewables
Energy transition in Germany

**Feed-in tariffs grow renewables**

Renewable electricity generation in Germany, 1990–2016

*Source: BMU*
Energy transition in Germany

EUROPEAN POWER UTILITIES UNDER PRESSURE?
HOW THE ELECTRICITY MAJORS ARE DEALING WITH THE CHANGING INVESTMENT CLIMATE IN THE EU POWER SECTOR

EON Loosens Ties to Old Energy as Uniper Starts Trading

RWE Plans Private Placements of Innogy as It Readies IPO
Energy transition in Spain

Ten years ago, Europe looked to Spain with its rapidly expanding renewables sector. Such glory days are in the past.

SPAIN

RICH IN SUN, POOR IN POLITICS

Sun-drenched and zephyr-kissed, Spain occupies a corner of Europe that is ideal for solar and wind power. After an initial surge of investment in renewables, the flaws of the government’s energy policy became evident, and the authorities slammed the brakes on investment. There are signs that they may now be relenting.
Energy transition in Spain

**SPAIN – YESTERDAY’S STAR**
Renewable energy consumption, million tonnes of oil equivalent, and share in gross final consumption of energy, percent

- 1991: 6.1
- 1996: 7.0
- 2001: 8.2
- 2006: 9.2
- 2011: 14.8
- 2016: 17.4 (17.3%)

Renewable energy consumption by source, 2016, million tonnes of oil equivalent

- Hydro: 3.1
- Wind: 4.2
- Solar thermal: 5.3
- Solar photovoltaics: 0.7
- Solid biomass (e.g., wood, crop residues): 1.0
- Biogas: 0.2
- Waste: 0.1
- Bio gasoline: 0.2
- Biodiesel: 0.2

© ENERGY INVESTMENT MANAGEMENT 2018 / EUROSTAT
Case: Enel

**Green Supermajors**
Installed capacity of the largest companies has grown 207% since 2010

<table>
<thead>
<tr>
<th>Company</th>
<th>2010</th>
<th>2020</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>China Energy Investment Corp.</td>
<td></td>
<td></td>
<td>+279%</td>
</tr>
<tr>
<td>NextEra Energy Inc.</td>
<td></td>
<td></td>
<td>+377%</td>
</tr>
<tr>
<td>Iberdrola SA</td>
<td></td>
<td></td>
<td>+82%</td>
</tr>
<tr>
<td>Enel SpA</td>
<td></td>
<td></td>
<td>+177%</td>
</tr>
<tr>
<td>Electricité de France SA</td>
<td></td>
<td></td>
<td>+178%</td>
</tr>
<tr>
<td>Berkshire Hathaway Energy Co.</td>
<td></td>
<td></td>
<td>+946%</td>
</tr>
<tr>
<td>EDP SA</td>
<td></td>
<td></td>
<td>+73%</td>
</tr>
<tr>
<td>RWE AG</td>
<td></td>
<td></td>
<td>+146%</td>
</tr>
<tr>
<td>Engie SA</td>
<td></td>
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<td>+461%</td>
</tr>
</tbody>
</table>

Note: BloombergNEF captures only publicly available capacities
Source: BloombergNEF

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**Enel**

Renewables capacity | Market cap | Employees
--- | --- | ---
44GW | $103B | 67K

**Locations:** Based in Italy, operating in more than 30 countries including Morocco, South Africa, Chile, India and Canada

**Investment pipeline:** $190 billion to 2030

Enel is Europe's biggest utility. Its green power unit was founded in 2008, making it one of the veterans of the clean energy market. The company plans to spend 160 billion euros ($190 billion) over the next 10 years to more than double its renewable portfolio. With its broad geographic reach, Enel is positioned to help a growing number of countries make the transition to cleaner grids.

**Big goal:** Boost renewable capacity to 120 gigawatts by 2030
East-European Energy Transition Entrepreneurial Opportunities

Business Portfolio Strategy

- Strategy Process, Content, Context
- Understanding Future Worlds
- Context: International, Industry, Organizational, Management
East-European Energy Transition Entrepreneurial Opportunities

Creating the environment for the transition
Knowledge and experience
Financing solutions
Co-creation
East-European Energy Transition Entrepreneurial Opportunities

- Regulatory frameworks
- Permitting processes
- Grid connections
- Support regimes
- Financing conditions

In-depth understanding regional circumstances
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Energy Asset Classes

- Hydro Power Plant
- Solar (PV) Power Plant
- Biomass Power Plant
- Windfarm
- Waste to Energy Plant
- Combined Heat and Power Plant
Structuring of an energy asset in a SPC

- **Investor**
- **Development**
- **Engineering, Procurement & Construction (EPC)**
- **Operation & Maintenance (O&M)**
- **Grid owner**
- **Bank**
- **Insurance Co.**
- **Utility / Authority**

**Others (roads, water)**
- Services

**Utility**
- PPA
- Permits
- Tax Incentives

**Authorities**
- Tax Incentives

**Landowners**
- Land contract

**SPC administration**

**Grid connection**
- Grid owner

**Loan agreement**

**Feed-in Subsidy**
Six phases can be distinguished in the project lifecycle:

- **Portfolio strategy and business planning**: Select relevant activities for organization based on the long term strategy and scope.
- **Feasibility phase**: Assess leads on their feasibility (identify show-stoppers).
- **Scoping phase**: Select and optimize business opportunities.
- **Definition phase**: Define, negotiate and finalize contracts.
- **Realization phase**: Realization of the project (including commissioning).
- **Operational phase**: Operational management of asset.
Enviem Green Power

Enviem Holding

External RE project

Enviem Solar Projects BV

Enviem Wind Projects BV

Enviem Energy Storage

"Enviem Green Power BV"

Energy supply retail customers and SMEs

PPA

https://www.enviem.nl/en
Enviem Green Power
Statkraft

Renewable Energy development & construction company

Investor

100%

RENEWABLE ENERGY OPERATING COMPANY

Returns for dev & construction and transfer at completion

Equity

Equity

Equity

Equity

Equity

Returns for dev & construction and long term

Bank

Construction Loan up to 80% for 6-9 months (option)

SOLAR PARK SPV 1
SOLAR PARK SPV 2
SOLAR PARK SPV 3
SOLAR PARK SPV 4
SOLAR PARK SPV 5

Project Finance Loan up to 80% for 20 yrs

Bank

EPC / O & M

Statkraft EM
Case: Statkraft

Purchase of Solarcentury shares completed
27 NOV, 2020

Today, Statkraft completed the acquisition of Solarcentury, a global solar developer headquartered in London.

News #Solar power

With the completion of the transaction, Statkraft becomes the owner of 100 per cent of the shares in Solar Century Holdings Ltd and its subsidiaries. After an interim period, in which Solarcentury will continue to operate as a distinct business unit, the plan is to merge the two teams under the Statkraft brand within 2021.

Announcing the acquisition on 2 November, Christian Rynning-Tynnesen, CEO of Statkraft stated:

“This acquisition is in line with our strategy to ramp up as a wind and solar developer and become one of the leading renewable energy companies globally. Just like hydropower and solar power complement each other, Statkraft and Solarcentury are an excellent fit in terms of purpose and people. Joining forces will accelerate our growth and continue to drive the energy transition forward.”

Established in 1998, Solarcentury is a leading global solar power company that develops, constructs, owns and operates utility-scale solar and smart technology. Solarcentury is known internationally for developing and building some of the largest utility-scale solar projects in the UK, the Netherlands, Spain, Kenya and Mexico, including pioneering projects such as the world’s first solar bridge at Blackfriars Station in Central London.

Solarcentury’s mission is to make a meaningful difference in the global fight against climate chaos by making solar power the dominant energy source worldwide. During Solarcentury’s 22-year history, the business has helped solar power become mainstream, and the company’s projects have generated 6 TWh of clean electricity, saving over 1.7 million tonnes of CO2 emissions.
Case: Vopak

Vopak and HyET Solar Collaborate on 1MW Thin-film Storage Tank Application

HyET Solar have received an order from Vopak to supply their thin-film modules (HySolFlex) on new and potentially even more storage tanks in Eemshaven. Subject to regulatory and permitting approval, HyET Solar is the only suitable Solar PV candidate for this application because of its unique product characteristics such as low weight, flexibility and ATEX certification. The project will result in 1MW of cost-effective power generation capacity.

Amersfoort, April 3rd 2020

ELESTOR enters cooperation with Vopak for scaling HBr Flow Battery Technology

May 6th, 2021 | 0 Comments

Left to right: Hidde Haas, General Manager & Commercial Director, Elston (ELESTOR); Kees de Vries, Business Development Manager, Vopak (left, Vice President Europe & Asia); Brian van der Velden, Business Development Manager, Vopak; Casper van den Broek, CEO, Elston; Reinoud van den Bosch, Managing Director, Vopak.
Case: Zonnegilde – Solar on industrial rooftops

[Image of solar panels on an industrial rooftop]

[Zonnegilde logo]

(https://www.zonnegilde.nl/)
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